CHAPTER FIVE
ENVIRONMENTAL CONSEQUENCES

5.0 INTRODUCTION

Pursuant to the FAA's environmental orders 5050.4A, *Airport Environmental Handbook*, and 1050.1E, *Environmental Impacts: Policies and Procedures*, the potential impacts of the projects associated with Alternatives A (No Action Alternative), and Build Alternatives C, D, and G, are described in this chapter. Potential impacts to the following environmental resource categories have been evaluated:

5.1 Noise
5.2 Compatible Land Use
5.3 Surface Transportation
5.4 Social Impacts
5.5 Secondary (Induced) Impacts
5.6 Air Quality
5.7 Water Quality
5.8 DOT Section 4(f)/6(f) Lands
5.9 Historic, Architectural, Archaeological, and Cultural Resources
5.10 Biotic Communities
5.11 Threatened and Endangered Species
5.12 Wetlands
5.13 Floodplains
5.14 Coastal Zone Management Programs and Coastal Barriers
5.15 Wild and Scenic Rivers
5.16 Prime and Unique Farmland
5.17 Energy Supply and Natural Resources
5.18 Light Emissions
5.19 Solid Waste and Hazardous Materials
5.20 Construction Impacts
5.21 Environmental Justice
5.22 Other Issues Relating to Cemetery Acquisition
5.23 Issues Relating to Due Process Claims and Formal Adjudicative Processes

5.0.1 Years of Analysis

The analysis of each of the environmental resource categories previously listed focuses on the effects of the three Build Alternatives (Alternatives C, D and G) and compares them to the future No Action Alternative (Alternative A). **Chapter 3, Alternatives** and **Appendix E**, **Alternatives** provide the detailed descriptions of each alternative. As discussed in **Chapter 3**, Alternative C has been identified as the preferred alternative in this EIS.

The analyses of environmental impacts in this EIS are generally presented for the following years of analysis:

- **Baseline Conditions** – The baseline conditions reflect the 2002 conditions as this EIS was initiated in 2002.
- **Build Out** – This is the anticipated year (2013) that all components of the alternatives are anticipated to be completed and operational.
- **Build Out +5** – This is a future year (2018) representing five years beyond the completion of all components (Build Out) of the proposed action and other proposed projects.

In addition to these years of analysis, there are also two interim years of analysis representing major phases of construction.

- **Construction Phase I** – This represents the anticipated year (2007) that the first major phase of the proposed action is anticipated to be completed and operational.
- **Construction Phase II** – This represents the anticipated year (2009) that the second major phase of development would become operational.

Where appropriate, the environmental effects of these interim years of construction are presented for informational purposes to describe the differences between the alternatives under consideration. However, since these impacts would be temporary in nature, specific long-term mitigation would not be required for these interim construction years.

5.0.2 Operational Activity

Table 5.0-1 summarizes the forecast activity and annual average delay associated with each alternative considered in this chapter. As shown, the No Action Alternative (Alternative A) forecast activity is constrained to 974,000 annual operations. Impacts presented in this chapter for Alternative A are based on this constrained level of activity. **Appendix B**, **Aviation Demand Forecast**, discusses the assumptions related to both unconstrained and constrained forecast activity in greater detail. **Appendix D**, **Simulation Modeling**, discusses the operational characteristics and delay results for the alternatives in greater detail.

TABLE 5.0-1
SUMMARY OF ACTIVITY BY ALTERNATIVES

Activity	No Action (Alternative A)	Build Alternatives		
		Alternative C (a)	Alternative D (a)	Alternative G (a)
Annual Aircraft Operations				
2007	974,000	1,026,300	1,026,300	1,026,300
2009	974,000	1,057,200	1,057,200	1,057,200
2013	974,000	1,120,600	1,120,600	1,120,600
2018	974,000	1,194,000	1,194,000	1,194,000
Annual Enplaned Passengers				
2007	36,219,500	36,943,000	36,943,000	36,943,000
2009	37,717,500	39,149,000	39,149,000	39,149,000
2013	40,908,500	43,912,000	43,912,000	43,912,000
2018	44,972,500	50,372,000	50,372,000	50,372,000
Annual Average Delay Per Operation (min)				
2007	16.2	15.5	15.5	15.5
2009	15.9	10.3	10.3	10.3
2013	17.2	5.0	8.2	5.6
2018	17.1	5.8	10.5	6.9

Sources: See Appendix B for annual aircraft operations and annual enplaned passengers;
See Appendix D for average annual delays in minutes per operation.
Notes: (a) For Alternatives C, D, and G, delay estimates reflect proposed project phasing.

5.0.3 Organization of the Environmental Consequences Chapter

A detailed list of project components for each alternative under consideration, by phase, is provided in **Table E-19** of **Appendix E**, **Alternatives**. **Exhibits 5.0-1** and **5.0-2** depict the primary components of each alternative considered in this chapter by phase.

In addition to the major components of the Build Alternatives, other projects are also expected to take place in the Airport vicinity regardless of which Build Alternative is implemented. These projects are included in the environmental analyses to ensure consideration of potential cumulative effects. These other projects will be completed at different times throughout the study period as outlined in **Table E-19**, in **Appendix E**. The potential cumulative environmental effects of these past, present and reasonably foreseeable projects is presented in **Chapter 6**, **Cumulative Impacts**.

For each impact category in which environmental consequences were identified, the following information is generally provided: (1) Background and Methodology, which includes Regulatory Context, Thresholds of Significance, and Methodologies; (2) Baseline Conditions; (3) Alternatives Analysis; (4) Potential Mitigation Measures; and (5) Summary.

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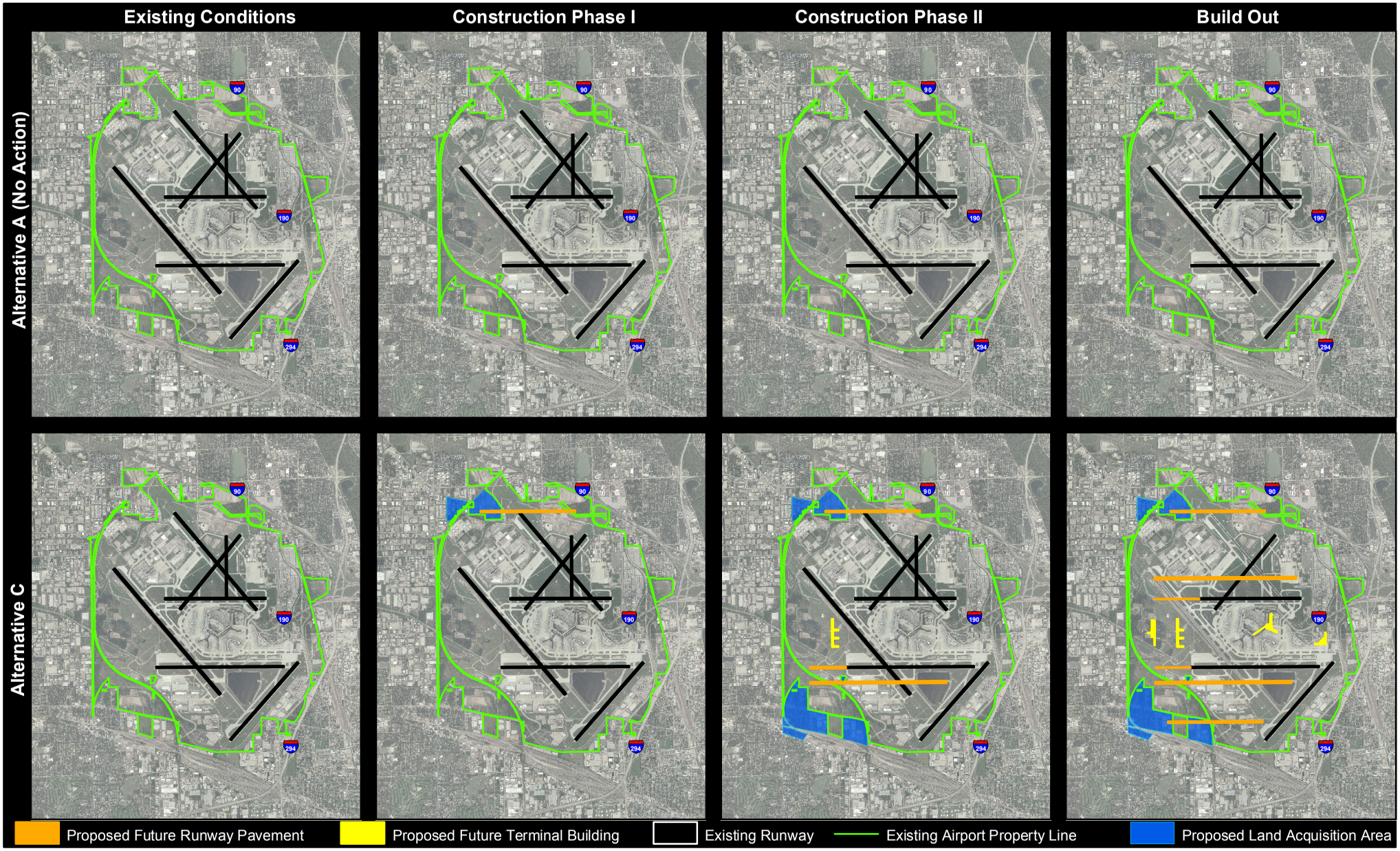

Source: ALP Drawing Set, Ricondo and Assosiates, INC [CCT], 2003.

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Primary Components of Alternatives A & C by Project Phase

▶ Exhibit 5.0-1

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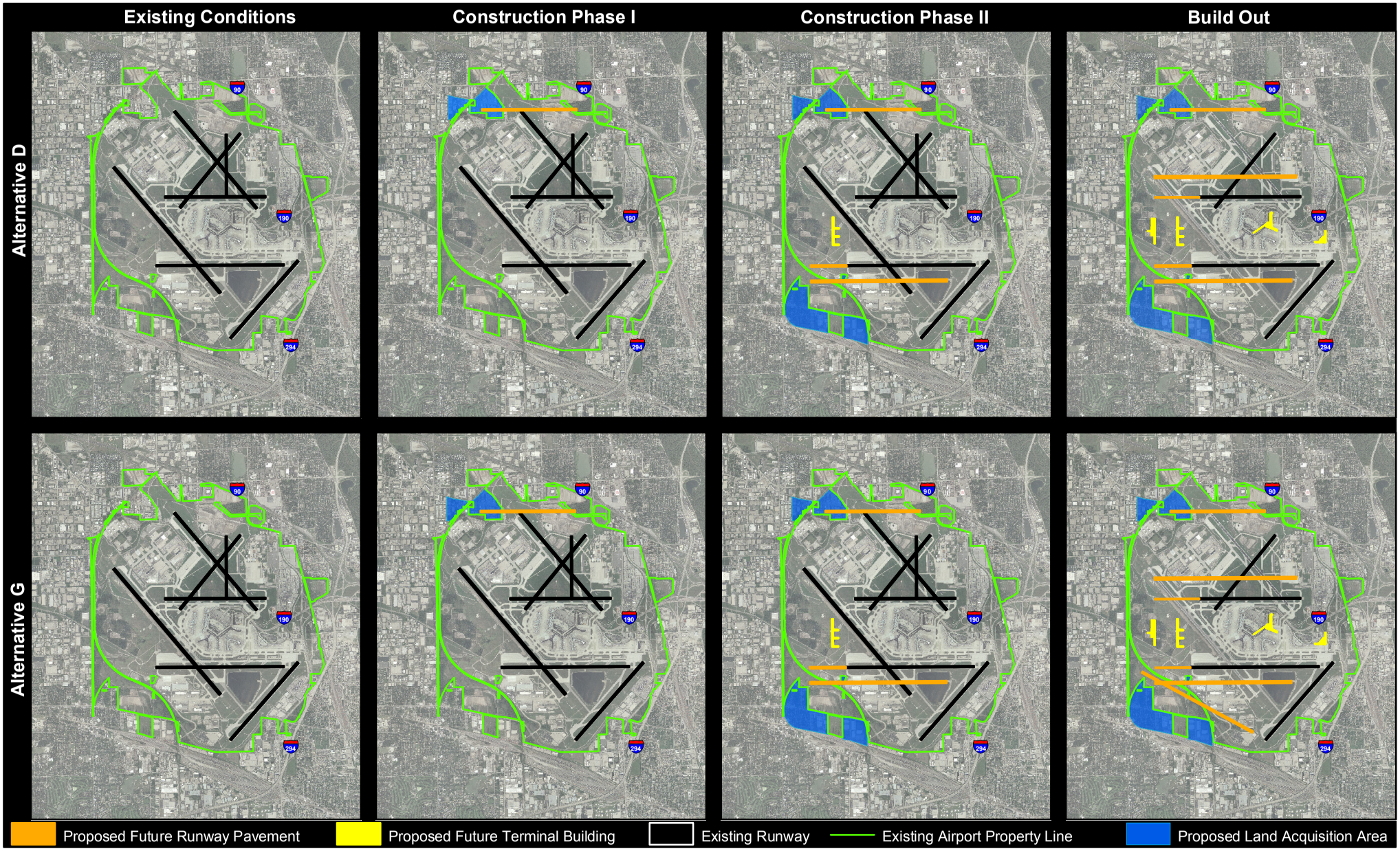

Source: ALP Drawing Set, Ricondo and Assosiates, INC [CCT], 2003.

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Primary Components of Alternatives D & G by Project Phase

▶ Exhibit 5.0-2

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5.0.4 EIS Schedule

The FAA is responsible for preparing this EIS and Record of Decision (ROD). The City of Chicago developed and submitted a construction schedule to be used in this EIS. This schedule was based on the City's anticipated EIS/ROD completion date in 2004. Subsequently, the FAA informed the City that the EIS/ROD process would be completed in 2005.

As owner and operator of the Airport, the City controls the schedule of construction for any alternative approved by the FAA. In the case of this EIS, the City's construction schedule was established over two years ago. In a project of this magnitude, and especially given the importance of O'Hare as such an integral part of the National Airspace System (NAS), the FAA's desire to produce a top-quality National Environmental Policy Act (NEPA) document took precedence over adhering to the originally proposed schedules. Accordingly, neither the original EIS schedule nor the City's construction schedule, both of which were established in 2002, will be achieved. Although the Agency regrets that this delay has occurred, the additional time spent in preparing this EIS will benefit FAA decision makers, commenting agencies, and the reviewing public.

5.0.4.1 Impact of the Construction Schedule Start-up and Duration

The preparation of any EIS requires that certain assumptions (e.g. forecast, construction schedule, development plan) must be made early in the process to provide a framework for the environmental analysis. In this case, those assumptions were established in late summer/early fall of 2002. These assumptions helped to form the basis for identifying and selecting the various alternatives to be considered. These assumptions further enabled computer simulation models to be formatted and run to analyze the potential impacts of the alternatives on numerous environmental categories required for consideration under NEPA. As stated above, the analyses of environmental impacts in this EIS are presented for the following conditions (where appropriate):

- Baseline – represents conditions in 2002
- Construction Phase I – First major construction phase complete (2007)
- Construction Phase II – Second major construction phase complete (2009)
- Build Out – Construction completed and operational (2013)
- Build Out + 5 – Five years beyond Build Out (2018)

Throughout 2002 and most of 2003, the expectation of the FAA was that the entire NEPA process could be completed, and a ROD could be issued, sometime in the middle of 2004 (consistent with the City's original EIS schedule) As a result, initially the EIS analyses were prepared using specific "years of analysis," (i.e. 2007, 2009, 2013 and 2018). This assignment of years of analysis was necessary to allow technical experts to begin the work (e.g. running models) of disclosing potential impacts in compliance with NEPA. However, in early 2004, it became clear to the Agency that the City's proposed EIS/ROD schedule was incompatible with the time required to complete the EIS process. Accordingly, the years of analysis were revised to reflect major phases (i.e. Construction Phase I, Construction Phase II, Build Out, and Build

Out +5), rather than specific years. In addition, and in an effort to assist the FAA with adequate disclosure of the best estimate of the revised construction timetable, the City of Chicago submitted a letter in December 2004[1] confirming revised construction timetables.

5.0.4.2 Alternative Construction Schedules

The changes in presentation (i.e. major phases, construction schedules) described below were made to allow flexibility given the uncertainties that abound regarding construction implementation, and to acknowledge that commencing construction in 2004 was not feasible. There are other uncertainties that can also affect construction, including, for example, weather conditions, length of construction season, etc. Therefore, in an effort to provide this flexibility and bound the potential timeframe under which construction could commence or be completed, the following potential construction schedule scenarios were considered:

- Original Schedule – The original construction schedule submitted to the FAA by the City called for construction to begin in mid-2004. For reasons already identified, it is now evident that this schedule was unduly optimistic. Details of the original schedule are presented in **Section 5.20**, **Construction Impacts**.

- Compressed Schedule – This construction schedule would compress the construction that was originally scheduled between July 2004 (Year 1 of the Original Schedule) and September 2007 (Year 4 of the Original Schedule) into the time period of September 2005 (Year 1 of the Compressed Schedule) to September 2007 (Year 3 of the Compressed Schedule). Unlike the original schedule, the City's proposed Runway 9R/27L would be fully operational in October 2007 (Year 3 of the Compressed Schedule) instead of January 2007. All other future years of analysis would remain the same as those assessed in the original schedule.

- Delayed Schedule – This construction schedule is the same as the original construction schedule, but delayed by 14 months. Instead of construction beginning in July 2004 (Year 1 of the Original Schedule), it would begin in September 2005 (Year 1 of the Delayed Schedule). For all other future years of analysis, there would be a one-year delay (i.e. 2008, 2010, 2014, and 2019 are analyzed instead of 2007, 2009, 2013, and 2018). However, reference will continue to be made to the construction start year for each potential construction schedule (i.e. Year 1, Year 2, or Construction Phase I, Construction Phase II, Build Out, and Build Out +5).

These construction schedules are further discussed in **Section 5.20**. For more information, see **Appendix Q, Construction.**

The analysis using these above schedules provides disclosure of the maximum potential impacts. The years of analysis from the Original Schedule (i.e. 2007, 2009, 2013, and 2018) form the basis of all presentation comparisons relative to the appropriate impact categories.

[1] Letter from Rosemarie Andolino, City of Chicago, to Barry Cooper, FAA, December 20, 2004.

Representative years beyond those originally considered will also be analyzed to determine the potential impacts that could be realized. The focus of this effort will be primarily on **Section 5.1, Noise, Section 5.3, Surface Transportation,** and **Section 5.6, Air Quality.** Changes in gating assignments or the fleet mix of aircraft as a result of the potential construction schedules listed above are expected to be minimal. Therefore, the assumptions used for the original construction schedule were retained.

5.0.5 Status of Land Acquisition

In late 2001, the City began to pursue the acquisition of certain properties in the northwest acquisition area. As a result of the City's actions to acquire property in advance of a Record of Decision (ROD), the FAA wrote three letters[2] which state FAA's position that such actions were "solely at the City's own risk", "the EIS must evaluate that property from the perspective of the use of that property prior to its acquisition by the airport sponsor", and that "any property acquisition by the City will not influence the FAA's objective evaluation of impacts and alternatives such as may be found in forthcoming environmental documents pertaining to O'Hare." Copies of these three letters written by the FAA are included in **Appendix H, Social Impacts**.

The City's proposal to acquire certain properties also generated opposition from certain communities. At present, a lawsuit is pending against the City and the FAA in which the communities and others are seeking to prevent the City's acquisition. On July 10, 2003, the City of Chicago entered into an Agreed Order[3] with the Plaintiffs which limits property acquisition that can occur prior to completion of the EIS process within Bensenville and Elk Grove Village. The Agreed Order states:

> IT IS HEREBY ORDERED THAT:
>
> The City of Chicago agrees that the City voluntarily agrees that it will not acquire property in the Village of Bensenville and Elk Grove Village for the OMP, or acquire the Rest Haven or St. Johannes Cemeteries, unless and until the FAA has issued a Record of Decision following completion of an EIS for the OMP. The City also agrees that it will not acquire any property subject to NHPA or Section 4(f) until the FAA determines that the requirements of those laws have been satisfied for the OMP. This agreement does not include hardship cases that may arise in Bensenville or Elk Grove Village prior to the FAA's issuance of a Record of Decision. The City remains willing to acquire properties in hardship situations in Bensenville and Elk Grove Village prior to the FAA's decision on the OMP, as allowed by FAA guidance, with advance consent by Village Plaintiffs required to such acquisitions.

The status of the City of Chicago's land acquisition as of October 29, 2004 is shown in **Exhibit H-1** in **Appendix H**.

Additionally, the FAA has advised the City of Chicago that any pre-EIS property acquisition undertaken by the City would not influence the FAA's objective evaluation of impacts and

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[2] Letters from FAA to City of Chicago Department of Aviation dated December 5, 2001, August 19, 2002, and May 28, 2003.

[3] St. John's United Church of Christ et. al. v. City of Chicago et. al. in the United States District Court for the Northern District of Illinois Eastern Division, Case No. 03-C-3726, July 10, 2003.

alternatives in the execution of its EIS responsibilities, nor would it be allowed to prejudice any future FAA decisions. Accordingly, this EIS evaluates the No Action Alternative (Alternative A) as if no land had been acquired by the City of Chicago to assess the potential impacts of the Build Alternatives.